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ABSTRACT

The Communication Competency Assessment Instrument (CCAI) was developed as a college-level communication competence measure. However, because the listening portion of the CCAI requires individual testing and is not practical for large-scale testing situations, an additional multiple choice measure was developed. In a study conducted at Kent State University, 339 students in introductory speech communication classes completed three listening measures: the Kentucky Comprehensive Listening Test, the Watson-Barker Listening Test, and the open-ended (OE) and multiple choice forms of the CCAI. Analysis of the students' scores indicated that there are many similarities between the Kentucky and the Watson-Barker tests, but that the strongest relationship among the listening tests exists between the Watson-Barker Listening Test and the CCAI-OE. Comparison of these three tests has shown that listening to an audiotape may differ from receiving the stimulus through videotape or in actual performance and that the questions must be worded accurately. Several additional concerns have been discovered and should be addressed in listening test construction and development. (DF)

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# LISTENING ASSESSMENT VIA THE COMMUNICATION COMPETENCY ASSESSMENT INSTRUMENT

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Abstract

This paper examines the development of the listening test portion of the Communication Competency Assessment Instrument and reports on a new method of achieving listening test scores. The multiple choice method was developed during the Summer and Fall of 1985 and the results of this instrument were compared to the items in the CCAI, and the subjects' scores on the Kentucky Comprehensive Listening Test and the Watson-Barker Listening Test. Results indicate that the open-ended version of the CCAI is superior to a multiple choice format. Implications of testing listening ability are discussed.

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## LISTENING ASSESSMENT VIA THE COMMUNICATION COMPETENCY ASSESSMENT INSTRUMENT

The Communication Competency Assessment Instrument was developed as a college-level comprehensive communication competence measure. The goal of the instrument is to identify students who may have difficulties with both sending and receiving communication in an educational setting (Rubin, 1982b). Thus, the comprehensive nature of the instrument mandated that listening, as well as speaking and interpersonal skills, be assessed.

The listening portion of the CCAI requires that students view a videotaped representation of a first day in a listening class. The instructor of this class first explains the course requirements, explains three factors which affect effective listening, gives three ways in which students can improve their listening abilities, and explains the first assignment for the class. All this is accomplished in the 7 minute and 40 second segment. The videotape was kept to this size so that long-term memory would not come into play when listening was assessed. When the instrument was first being developed, no other videotaped listening tests were available for use. It was felt that a videotaped version of the stimulus material would be superior to an audiotaped version since (1) picture and sound is more typical of the every-day listening students experience in classroom settings, and (2) the dual-channel representation would provide more information for students and enhance recall and learning (Nelson & Moll, 1951; Gunter, 1980).

To determine concurrent validity of the listening portion of this instrument, 30 students viewed the videotape and completed in writing the four items which are assessed via the listening tape. At the same time, they completed the Lieb-Brilhart (1965) listening test. Scores on the two instruments correlated at .69 ($p < .0001$) (Rubin, 1982b), indicating concurrent validity.

Normally, however, in keeping with the nature of the measurement mode (oral), students are orally asked the four questions about the listening videotape and they respond orally to these questions. Two earlier studies of the questions students are asked about the videotape (Rubin, 1982b, 1985) reported that, on a 5-point scale, the mean scores for differentiating fact from opinion were 3.57 and 3.49, for understanding the main points in the stimulus lecture, 3.06 and 2.73, for identifying the class assignment, 3.5 and 3.17, and for summarizing instructions to others, 3.49 and 3.02, respectively. Henzl, Mabry and Powell (1983) reported that the last three of these four items factored into a listening factor when the number of factors was undetermined by the researchers and when Henzl (personal communication) forced the 19 items of the CCAI into 4 factors, all four items comprised a listening factor. Therefore, for this current study, it was determined that the four items would be considered together as the listening portion of the CCAI and to differentiate this from the second method of testing listening using the CCAI, it would be designated the CCAI-OE (open-ended) scale.

The oral response mode was and is seen as the ideal format for assessing listening for three basic reasons. First, having the rater ask the questions requires the student to listen to the question in addition to the stimulus. To be certain that students understand what is asked of them, raters can look for puzzlement and can elaborate on or repeat missed portions of the question. This gives the student the best chance for success.

Second, reading ability is not an intervening variable when listening ability is assessed. We have noticed, when using other listening tests where a specified amount of time is given to the student to read and respond to the question, some students are not able to complete reading the question before the next listening stimulus material begins. Thus, their listening scores are partly based on reading ability.

Third, students have time to recall what was presented in the videotape without time pressure. The pressure of moving on to the next question may force incorrect answers; having time to think about what was heard may increase the chances for correct responses. Again, the goal of this instrument is to identify students' communication problem areas, but under conditions where they are given every opportunity for success.

The main criticism of the oral, open-ended approach is that it is not practical for large-scale testing situations and, therefore, not cost-effective. Students must be tested individually. Also, all four of the listening assessment items (fact-opinion distinction, understanding suggestions, identifying class assignments, and summarizing) are not typical of most listening tests. Two of these (fact-opinion and summarizing) involve other oral communication skills. Therefore, there are only two items which assess listening in its pure sense. Some users of the CCAI have suggested that an additional measure be created that includes multiple items so that (1) the listening videotape could be used as a stand-alone listening test or (2) as an additional measure of listening ability.

To create such an instrument, we kept in mind the concerns we identified previously (about time pressure, making sure the student understands the questions, and reading ability). We determined that the instrument should be completed only after students listened to the videotape, that students should receive as much time as they need to answer the questions, and that the items should be multiple-choice in nature (to increase understanding).

During the summer of 1985, we created 12 multiple-choice questions about the videotaped material and pretested these with a group of 15 students enrolled in the basic communication class at a regional campus of Kent State University. These students (10 females--mean age of 26.5 years--and 5 males--mean age of 21.2 years) viewed the videotape and were asked to answer the questions and comment on any questions which were difficult to understand or vague. These students found no problems in how the questions were phrased and indicated that the questions appeared to test what they had heard via the videotape.

As we analyzed the results, two questions which all students answered correctly were eliminated from this version of the test and some of the response items were refined for the next version of the CCAI-MC (multiple-choice) form. This form was then administered to a large group of students along with two other listening assessment instruments.

## METHOD

### Sample

Three hundred and thirty nine students enrolled in introductory speech communication courses at Kent State University were asked to complete three listening assessment instruments. Two hundred and seventy-eight of these students were enrolled in a basic public speaking course and 54 were enrolled in sophomore-level communication theory course.

Demographic data collected on the subjects revealed that the mean age of this group was 20.98 years, students had completed an average of 47.61 college credits, and that 46.6% were female and 52.2% were male.

### Procedures

Students were asked to complete three listening measures: The Kentucky Comprehensive Listening Test (Bostrom & Waldhart, 1980b), the Watson-Barker Listening Test (Form B) (Watson & Barker, 1983) and the two forms of the CCAI (-OE and -MC). From a random starting point, the three measures were presented to students on three separate days within a one week period in a counterbalanced manner so that order effects would be eliminated. However, because of circumstances surrounding the use of videotape in one large lecture hall, the six order groups were not equal in size.

The CCAI-OE consisted of the four questions that are orally asked to students during the typical CCAI testing session. They were presented in writing first to the students so that students would be recalling the information that they had listened to on the videotape. As each student completed this form, it was collected and the student was given the multiple-choice form.

The open-ended written CCAI responses were coded on a scale which ranges from 5 (the most appropriate response) to 1 (least appropriate). This procedure and anchors for each of the 5 points are detailed in the CCAI rating book (Rubin, 1982a). Both authors coded these responses independently and inconsistencies were resolved through discussion. The total score (of the 4 items) constituted the measure of CCAI-OE listening. The multiple choice items in the CCAI-MC were scored according to the number of correct responses that students obtained.

Four components of listening are measured by the Kentucky Comprehensive Listening Test (KCLT): Short Term Listening (STL), Short Term Listening with Rehearsal (STL-R), INTERpretation of meaning (INTER), and LECTure comprehension (LECT). By combining six items of the STL section and six items in the STL-R section, a DISTraction (DIST) score is computed. These five scores are combined and are provided to listeners in the form of a listening profile. In the past, Bostrom and Waldhart (1980a) found that short term listening was closely related to oral performance and lecture comprehension was related to general mental ability and written examination scores. Based on these findings, we predicted that the CCAI-OE and CCAI-MC would be more strongly related to LECT scores than to the other components of the KCLT.

Since the KCLT test was administered in a large lecture hall to 235 of the subjects, it was impossible to police students during this test. The last section of the test asks students not to look at the questions until the listening stimulus is completed. However, we noted that many students were filling out the questions as they listened to the test. In their next testing session we explained to the students that this would damage the results of the study and asked them to place an asterisk by their name if they completed the answers as they were listening during the KCLT. Those students who complied with our request (N = 12) were eliminated from analysis on this measure.

The Watson-Barker Listening Test (WBLT) is divided into five parts, each designed to test a particular type of listening skill. Part I measures the listener's skill in INTERpreting message content in Short Term listening (INTER-ST). Part II measures the listener's ability to evaluate DIALOGue/conversations and interpret the meanings implied by the speakers (DIALOG). Part III requires listeners to answer questions after listening to a series of SHort LECTures (SH-LECT). In Part IV, questions and statements are used to measure the listener's skill in interpreting how something is said or the EMOTion being communicated rather than the content of the message (EMOT). And Part V measures a listener's ability to follow DIRECTions and instructions (DIRECT).

Based on the goals of the five parts of the Watson-Barker test, we predicted that the CCAI-OE and CCAI-MC scores would correlate most highly with the SH-LECT and DIRECT components of the test and the SH-LECT component would be related to the LECT component of the KCLT. In addition, following from the findings of Applegate and Campbell (1985), we predicted high correlations between the STL-R component of the KCLT and the INTER-ST component of the WBLT, between the KCLT's STL component and the WBLT's SH-LECT component, between the KCLT's LECT component and the WBLT's DIRECT component, and between the totalled scores of the WBLT and KCLT.

The results from the three listening measures were returned to the students as a listening profile. Students' grades were unaffected by their scores on these instruments. Since these instruments were administered on different days, missing data occurred. In all statistical analyses, case-wise deletion was used when comparisons were made among the various listening tests. Since students had indicated their sex on the answer sheets, we included sex as a variable in the data analyses.

## RESULTS

Mean, median, mode, and standard deviations for all the instruments are presented in Table 1. As predicted, and as demonstrated in Table 2, the CCAI-OE ($r = .17$, $p < .01$) and CCAI-MC ($r = .21$, $p < .001$) total scores were more strongly related to lecture comprehension (LECT) score in the Kentucky Comprehensive Listening Test than to any of the other components. As Table 2 also indicates, the other components of the KCLT were virtually unrelated to the items assessed in the CCAI.

We also predicted that the CCAI-OE and CCAI-MC scores would correlate highly with the SH-LECT and DIRECT components of the Watson-Barker test. As Table 2 indicates, the SH-LECT component correlated at .31 ($p < .001$) with the CCAI-OE and at .29 ($p < .001$) with the CCAI-MC. Three of the four questions in the CCAI-OE (with the exception of the fact/opinion distinction) were correlated with this item. The correlations between the two CCAI forms with the DIRECT component were smaller, yet statistically significant. Once again, all questions except the fact/opinion item were significantly correlated with the DIRECT component. In general, all the Watson-Barker components were positively and statistically significantly related to the two CCAI forms.

Applegate and Campbell's (1985) results led us to believe that the WBLT SH-LECT component would be related to the LECT component of the KCLT. These two components did correlate at .17 ($p < .01$). In addition, we predicted high correlations between the STL-R component of the KCLT and the INTER-ST component of the WBLT ($r = .13$, $p < .05$), between the KCLT's STL component and the WBLT's SH-LECT ($r = .10$, n.s.) component, between the KCLT's LECT component and the WBLT's DIRECT component ($r = .18$, $p < .01$), and between the totalled scores of the WBLT and KCLT ($r = .32$, $p < .001$). Other strong relationships existed between the two instruments. In particular, the WBLT's INTER-ST correlated significantly with the KCLT's STL ($r = .19$, $p < .01$) and LECT ($r = .24$, $p < .001$) components. And the WBLT's EMOT component correlated with the KCLT's INTER component ($r = .23$, $p < .001$).

## DISCUSSION

As the findings seem to indicate, there are many similarities between the Kentucky and Watson-Barker tests. In addition, the CCAI forms seem to be related more strongly to the Watson-Barker test than to the Kentucky test. The strongest relationship among the listening tests exists between the WBLT and the CCAI-OE. This lends support for the concurrent validity of both of these instruments. It is, however explained by the fact that the two instruments measure similar listening components; both measure listening and directions.

Second, the CCAI-OE form is superior to the CCAI-MC form. Even though many seek a quick and easy format for rating listening ability, the open-ended responses seem superior (in the form of concurrent validity) to the multiple-choice format. Ease of guessing on a multiple-choice test is most probably why the relationship between the open-ended and multiple-choice formats were not more closely related.

In creating the multiple choice version, we realized that there are two main issues that listening-test developers must consider. What is it that is or should be tested and what mode of testing is best. Through our experiences in comparing these three instruments we have developed some observations on the assessment process:

1. Understanding of concepts presented in a lecture format is an important part of a college student's listening environment. However, real-life situations differ from the listening test situations we have all created. The major difference is that students are allowed (and encouraged) to take notes during lectures. A lecture without note-taking is an unusual situation. Thus, the material presented in the listening stimulus tape must be necessarily brief and free of extraneous facts that may overload the channel. We're not advocating the addition of note-taking to listening tests since note-taking ability would mediate the test results. We are saying that we have to keep in mind the stimulus material. Also, distractions such as those found in many listening tests may not be typical of those occurring in everyday situations. The controversial material discussed in the KCLT distraction stimulus material would lead anyone astray.

2. Listening to an audiotape may very well differ from receiving the stimulus via videotape or in actual performance. Videotape has been found to be more involving and learning has been positively related to the 2-channel mode more than to a one-channel mode. The use of videotape presents problems in mass-testing situations, however. And real-life performance of the stimulus material leads to lack of control. So it is most important that the material be audible and understandable, whatever medium is used.

   We, in the North, found the dialects most distracting and many students were unable to understand what was being said, even though they were listening. Listening to dialects is another form of distraction, one which would not be typical of most college settings (in that students would be more attuned and used to listening to a Professor with a dialect). In addition, our copy of the Watson-Barker test was most inferior. Dual-channel presentation would have helped.

3. There are problems with all modes of responding on listening tests. Speaking ability would mediate the test results when students answer orally. With the Watson-Barker and Kentucky tests, reading ability is a mediator. We noticed many students who were unable to read all the responses in the amount of time given for responding to the

questions. Perhaps they had listened, but didn't make it through all the responses. Or perhaps they were busy reading when the next stimulus item was presented, so the next answer might be incorrect.

We also found that many students (in addition to the 12 honest ones) completed the lecture listening portion of the Kentucky test as they were hearing it. It was just too easy for them to turn the page over and listen for the answers. We must be aware of the potential of these factors. With the multiple-choice version of the CCAI test, we didn't hand out the questions until the videotape was finished playing (and they had completed the open-ended responses), so that reading ability wouldn't interfere with the results. Yet, guessing can occur on all multiple choice instruments and we can't be sure how much of the listening score is a result of good guessing. In addition, completing the open-ended version of the CCAI would serve as aided recall of information that students then used on the multiple choice version.

4. Lastly, questions must be worded accurately. We noticed that some of the KCLT questions asked for more than one answer. This is misleading in that only one response is correct (KCLT, Question #36). Also, some questions had two correct answers. This could cause extra confusion for students who listen carefully and know that two responses are possible.

This study has been most enlightening for us. We've discovered several additional concerns that must be addressed in listening test construction and development. However, the students in this study were helped the most. They received four indices of their listening ability and now can make choices about the avenues through which they can improve their listening skills. Most students in basic courses do not have access to this information.

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TABLE 1

DESCRIPTIVE STATISTICS ON THE LISTENING TESTS AND SUB-TESTS

| | MEAN | MEDIAN | MODE | STANDARD DEVIATION |
|---|---|---|---|---|
| KCLT TOTAL | 36.80 | 37 | 36 | 6.58 |
| STL | 7.16 | 7 | 7 | 2.12 |
| STL-R | 8.95 | 9 | 10 | 2.03 |
| INTER | 5.79 | 6 | 6 | 1.78 |
| LECT | 7.41 | 7 | 8 | 2.29 |
| DIST | 7.47 | 8 | 8 | 2.17 |
| WBLT TOTAL | 59.11 | 60 | 68 | 13.02 |
| INTER-ST | 5.03 | 5 | 6 | 1.99 |
| DIALOG | 5.21 | 5 | 5 | 1.58 |
| SH-LECT | 6.67 | 7 | 8 | 1.85 |
| EMOT | 7.22 | 7 | 7 | 1.50 |
| DIRECT | 6.15 | 6 | 6 | 1.88 |
| CCAI-OE TOTAL | 12.29 | 12 | 12 | 2.89 |
| CCAI-OE 1 | 3.70 | 4 | 5 | 1.46 |
| CCAI-OE 2 | 2.98 | 3 | 3 | .96 |
| CCAI-OE 3 | 2.87 | 3 | 3 | 1.20 |
| CCAI-OE 4 | 2.73 | 3 | 1 | 1.41 |
| CCAI-MC TOTAL | 7.14 | 7 | 8 | 1.71 |

TABLE 2

LISTENING TEST CORRELATIONS

| | KCLT-TOTAL | WBLT-TOTAL | CCAI-OE TOTAL | CCAI-MC TOTAL | SEX |
|---|---|---|---|---|---|
| KCLT TOTAL | 1.00 | .32*** | .11* | .07 | .12* |
| STL | .70*** | .18** | .10 | -.04 | .07 |
| STL-R | .73*** | .21*** | .07 | .03 | .10* |
| INTER | .41*** | .23*** | -.05 | .06 | .24*** |
| LECT | .51*** | .23*** | .17** | .21*** | -.02 |
| DIST | .81*** | .16** | .04 | -.04 | .02 |
| WBLT TOTAL | .32*** | 1.00 | .39*** | .27*** | .04 |
| INTER-ST | .25*** | .63*** | .31*** | .17** | .06 |
| DIALOG | .17** | .55*** | .25*** | .11* | .15** |
| SH-LECT | .21*** | .63*** | .31*** | .29*** | -.06 |
| EMOT | .21*** | .53*** | .17** | .20*** | .04 |
| DIRECT | .22*** | .63*** | .30*** | .20*** | .04 |
| CCAI-OE TOTAL | .11* | .39*** | 1.00 | .35*** | .12* |
| CCAI-OE 1 | .04 | .09 | .49*** | .05 | .05 |
| CCAI-OE 2 | -.01 | .16** | .44*** | .27*** | .12* |
| CCAI-OE 3 | .07 | .24** | .65*** | .22*** | .06 |
| CCAI-OE 4 | .14* | .38*** | .69*** | .28*** | .06 |
| CCAI-MC TOTAL | .07 | .27*** | .35*** | 1.00 | -.01 |

Note: *p < .05 **p < .01 ***p < .001